# SOIL CONSERVATION SERVICE NEWS

REGION 4

COMPRISING STATES OF LOUISIANA, ARKANSAS AND TEXAS, EXCEPT HIGH PLAINS AREA

REGIONAL OFFICE--FORT WORTH, TEXAS

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## DISTRICTS LAW IS ENACTED IN LOUISIANA

Enabling legislation providing for the establishment of legally constituted soil conservation districts was passed unanimously by both houses of the Louisiana Legislature late last month, the record vote being taken on June 27. The bill was signed by Governor Richard Leche shortly thereafter and becomes effective on July 27.

Louisiana is the twenty-sixth state to adopt the districts law. Arkansas, also in Region 4, was the first state in the nation to pass such a law and now has 10 districts in operation.

The bill provides that a state soil conservation committee composed of J. G. Lee, dean of the college of agriculture, Louisiana State University; J. W. Bateman, director of the Louisiana Extension Service; and C. T. Dowell, director of Experiment Stations, shall administer the law.

The action of the legislature has been enthusiastically received by farmers and farm groups throughout the state that have actively urged the creation of conservation districts to bring about widespread erosion control programs in all parts of the state. Although policies and plans of operation have not yet been completed by the state committee, groups of farmers from several parts of Louisiana have submitted petitions seeking the establishment of districts in their local areas.

The passage of the Louisiana districts law is the culmination of a progressively intensified interest in the establishment of complete and coordinated conservation farming programs on as many farms as possible, brought about by the practical demonstrations conducted by Soil Conservation Service camps and projects. The original demonstration project in Louisiana was set up in the Minden area in the spring of 1934. In order that demonstrations could be placed on an added number of farms to illustrate by actual field practice the value of a conservation program, the Minden CCC camp was also established in 1934.

Today there are six demonstrational projects and 11 CCC camps engaged in soil conservation work on 2,229 farms embracing a land area of 403,084 acres.

Projects are located at Farmerville, Ruston, Minden, Coushatta, Mansfield, and Clinton. Camps are located at Homer, Minden, Farmerville, Mount Hermon, Ruston, Arcadia, Jonesboro, Mansfield, Pleasant Hill, Kentwood, and Keithville.

The establishment of demonstrations marked the first time in agricultural history that an attempt had been made to put into practical application on a watershed basis all known erosion control methods. The successful trial of these methods on operating farms paved the way for their use on a still larger scale by the farmers themselves through the medium of organized districts.

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## REGIONAL CONSERVATOR HONORED

### Selected to Make Alaskan Survey

Louis P. Merrill, regional conservator for Region 4, is one of two regional conservators in the United States selected by the Chief of the Soil Conservation Service to make an investigation of erosion conditions in the agricultural areas of Alaska. Mr. Merrill and W. A. Rockie, regional conservator for Region 11, with headquarters in Spokane, Washington, will make the Alaskan survey.

Mr. Merrill left Fort Worth on July 15 for Seattle, Washington, on route to Alaska. He met Mr. Rockie in Seattle.

The development of fairly serious erosion conditions in Alaska has been reported during the past two years by the Alaskan Experiment Station and other agricultural groups in that territory. These conditions have been particularly noticeable on the agricultural lands of the Matanuska Valley of southern Alaska and in the vicinity of Fairbanks along the Tanana River.

Mr. Merrill and Mr. Rockie will study the affected areas with a view to determining the degree of erosion present and the control measures that can be successfully applied. This investigation will show whether or not a corrective program should be inaugurated in Alaska by the Soil Conservation Service.

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# CCC OFFICIAL VISITS ARKANSAS CAMPS

Charles A. Taylor, Washington, D. C., assistant director of the Civilian Conservation Corps spent three days in northeast Arkansas this month inspecting the soil and water conservation work being accomplished in the Forrest City, Jonesboro and Pocahontas CCC camp areas.

Representing Mr. Robert Fechner, CCC director, Mr. Taylor arrived in Forrest City on July 14 to attend the annual Crowley Ridge Peach Festival and to inspect erosion control and conservation farming methods being applied on farms under cooperative agreement with the Forrest City camp. He toured the Jonesboro area on July 15 and the Pocahontas area on July 16.

"Conservation of the soil as a means of producing a more permanent and abundant agriculture throughout the nation and a subsequent greater degree of prosperity for the farm population is one of the most important activities of the CCC," Mr. Taylor declared.

"We in Washington know that the farmers of the nation want, and are eager to receive, assistance in solving the erosion problem because we receive many requests each day from agricultural communities seeking the establishment of soil conservation camps," Mr. Taylor stated.

Mr. Taylor said also that on his trips throughout the nation he had observed that the soil and water conservation work being done by farmers with the assistance of personnel from the CCC camps has been of material benefit to entire communities. He said: "The CCC, through its contribution to erosion control activities, is a big factor in assuring economic security for the farmer. By conserving its soil, Arkansas (and all the other states in the Union) is assured of adequate agricultural crops of all kinds--for the present as well as the future."

"I think that the enthusiastic interest of the farm youths enrolled in the CCC in the soil conservation program has been responsible for the return of many of them to their farm homes with the ambition to 'make a go' of farming instead of attempting to find employment in an already overcrowded city labor field," he said. He added, "they have learned the right way to farm so that the soil will be conserved. Possessed of this knowledge and practical experience they will be able to make a success with an agricultural enterprise. This kind of training will be of inestimable value to them."

"Training of the type CCC enrollees are getting in the camps has provided them with a new and brighter outlook on life and a respect for the basic natural resources of the nation. Thus there is a definite correlation between conservation of the soil, forests and other natural resources with the conservation and reconstruction of the nation's youth," he said.

"I have been impressed on this visit to northeast Arkansas with the splendid spirit of cooperation manifested by the farmers in their relations with Soil Conservation Service technicians and CCC enrollees who are assisting them in controlling erosion on their farms," Mr. Taylor stated. "As long as this spirit of cooperation exists the farmers can be assured of complete success in their fight against erosion--and the result will be a better agricultural program benefitting many."

Mr. Taylor was accompanied on his tour of northeast Arkansas by Ed Nagle, Fort Worth, regional CCC administrator; J. H. Cheek, administrator for Texas; Dr. Fred Keller, Arkansas administrator; DeWitt Pyburn, Louisiana administrator and Dr. F. W. Cox, Pocahontas, chairman of the Board of Supervisors for the Tri-River State Soil Conservation District with headquarters in Pocahontas.

Discussing extensive soil and water conservation work being done in northeastern Arkansas by Soil Conservation Service projects and CCC camps and the state districts, Dr. Cox declared: "I am firmly convinced that the conservation of our soil through the adoption of proper land use principles is the salvation of the farmer. We know that better agricultural enterprises can be produced by proper farming methods that limit soil losses.

"The wide-spread adoption of conservation farming methods on our agricultural lands is the only avenue that will make it possible for the farmer to make a decent living. It is the means by which farmers will be kept on the farms and off the city relief rolls."

He pointed out that conservation farming opens new channels of profitable endeavor for youth. The return of farm youths from unsuccessful ventures in the cities to their farm homes can be made optimistic when they know that farm work can be profitable and provide them with a definite goal to work toward.

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# LOCAL ADAPTATIONS AID IN ESTABLISHING A STRIP CROP PROGRAM

By

W. M. Nixon, Assistant Agronomist

Although strip cropping was seldom used on the farms of Region 4 four years ago, farmers have given the practice increased attention until today it is widely used and recognized as a vital phase of a complete and coordinated erosion control program for agricultural lands.

The practice of planting crops in narrow bands across the slope was new to the farmers of this region when the Soil Conservation Service began operations four years ago, and advocated this measure as a part of the erosion control program. In some instances it was accepted by the farmer, only in order to benefit from terracing and other better known conservation practices. Objections to strip cropping were difficulty of harvesting narrow strips, and the lack of livestock to properly utilize feed produced. Continuous contact and educational work has been necessary to convince the farmer of the value of strip cropping as a farm practice. Careful observation and checking after intensive rains rains has proved that the use of strip crops alone, and in combination with terraces aid greatly in controlling soil losses.

The technique of strip cropping has been greatly improved by the efforts of the field men in working out a practical localized system to fit the individual farmer and farm needs. Representative examples of the progress made are:

The extensive use of lespedeza in parts of Arkansas and Louisiana as an erosion control strip. Lespedeza does well in some areas and acts as a very effective erosion control strip. It produces a good hay crop, and reseeds itself, eliminating the necessity of planting two annual crops each year. In the Coastal Plains area entire fields are often planted to a winter cover crop. When the crop is turned under in the spring a protective strip is left.

In areas where soil types and climatic conditions are such that it is not practical to plant a summer strip, the stubble and residue from the winter strip is often left for protection.

In the Blacklands of Texas where it is not practical to use peas and other summer legumes, due to root rot infestation, Huban clover which matures before root rot becomes prevalent, is being used extensively as a strip crop.

Also in the Blackland where there is not sufficient pasture on the individual farm and feed is needed, little bluestem, a good hay plant, is being used as a permanent buffer strip.

In the southern part of Texas, Rhodes grass, a valuable forage grass which reseeds itself is being used as a strip crop.

In the Grand Prairie and West Cross Timber sections of Texas where small grain is a major crop the farmers objected to the narrow strip crops in that they were difficult to harvest with large equipment. A system of strip cropping has been developed so that the small grain is planted in wide strips from 80 to 120 feet, alternating with row crops of equal width.

An excellent example of how strip cropping fits into the farming program is found in the Madisonville, Texas, camp area. This is a farming and livestock community and profitable use can be made of the feedstuff grown on strips. When the camp was established in 1935, only six acres of oats were found growing in the camp area. There were very few mowers, no binders or grain threshers on the surrounding farms. A good crop of oats has been grown each year on several hundred acres of strips since the camp work was initiated. Approximately one hundred mowers have been bought by the farmers, the majority of them by cooperators of the Soil Conservation Service. Four of the cooperators have bought grain binders, and one farmer has secured a threshing machine.

Strip cropping is not being offered as a "cure-all" by any means. There are areas where stripping alone is an effective control measure. On others it serves as a reinforcement to terracing.

Based upon past experience and observation the field men are more capable of determining the areas which can be controlled by strip crops alone and on which areas terracing and strip cropping in combination is needed.

From the above mentioned examples it can be seen that with the local adaptations, and practical application on the localized areas, strip cropping is gradually fitting into a well-balanced program.

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# WORK ACCOMPLISHED IN REGION 4
## DURING FISCAL YEAR
## JULY 1, 1937-JUNE 30, 1938

As of June 29, there were 9,820 farms comprising 1,588,945 acres under cooperative agreement with the Service in Region 4. In addition, the supervisors of the 10 state soil conservation districts in operation in Arkansas reported they had entered into cooperative agreements with 337 farmers operating 44,802 acres of land.

The farms and acreage under agreement in the camp and project areas were distributed as follows:

| STATE | FARMS | ACREAGE |
|---|---|---|
| Arkansas | 3,235 | 479,579 |
| Texas | 4,356 | 706,282 |
| Louisiana | 2,229 | 403,084 |
| Regional Total | 9,820 | 1,588,945 |

During the fiscal year just ended work was reported completed on 852 farms embracing a land area of 143,688 acres. This represents only those farms on which the conservation program has been fully established and does not include farms completed prior to July 1, 1937, nor does it include farms on which any portion of the treatment remains unfinished.

A partial table of work accomplished during the year on all farms follows:

### Crop Land Treatment

| | |
|---|---|
| Crop Land Treatment completed on | 43,278 acres |
| Cover crops established for first time | 14,844 acres |
| Strip cropping established for first time | 53,789 acres |
| Total acreage on which terracing systems were completed | 43,354 acres |
| Terraces constructed | 3,476 miles |
| Constructed on | 50,360 acres |
| Meadow Strip Outlets for terraces | 1,728,166 sq.yds. |
| Drainage area | 5,749 acres |
| Vegetative terrace outlets seeded | 103,520 sq.yds. |
| Drainage area | 320 acres |
| Vegetative terrace outlets sodded | 1,406,338 sq.yds. |
| Drainage area | 40,193 acres |

## Pasture Treatment

| | |
|---|---|
| Total pasture area treated . . . . . | 65,628 acres |
| Pasture area contour furrowed . . . . . | 9,948 acres |
| Pasture area contour ridged . . . . . | 6,911 acres |
| Pasture area contour ridged, furrowed and terraced . . . | 699 acres |
| Pasture area terraced . . . . . | 754 acres |
| Seeding . . . . . | 10,072 acres |
| Sodding . . . . . | 39,808 acres |
| Permanent hay land treated . . . . . | 4,172 acres |
| Woodland treated . . . . . (Gully control, tree marking, planting, interplanting, seed spotting, fire suppression, pre-suppression, etc.,) | 22,809 acres |
| Wildlife areas treated . . . . . | 1,555 acres |
| Fences constructed . . . . . | 535,281 rods |
| Fences removed . . . . . | 270,406 rods |
| Roads and bridges improved . . . . . | 257 miles |
| Stock ponds built . . . . . | 94 |

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## SOIL AND WATER CONFERENCE HELD AT COLLEGE STATION, TEXAS

Representatives of the Soil Conservation Service, the Extension Service and Experiment Stations from the states of Kansas, Missouri, Arkansas, Oklahoma, Louisiana and Texas attended the ninth annual meeting of the Southwest Soil and Water Conference conducted at College Station, Texas, July 1 and 2.

R. E. Dickson, superintendent of the Spur, Texas, Erosion Experiment Station was selected to serve as president of the group during the current year. He succeeds Guy Fletcher, Natchitoches, La., state coordinator for the Soil Conservation Service in Louisiana.

Glenn Riddell, Little Rock, Ark., acting state coordinator for the Service in Arkansas, was elected vice president, replacing Mr. Dickson. Clay Potts, Oklahoma A. & M. College, Stillwater, was elected to serve his ninth term as secretary-treasurer.

Agricultural technicians attending the meetings discussed progress, experimental data and improved methods of conserving soil and water

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DICKSON DISCUSSES PROGRESS OF RESEARCH
WORK AT THE SPUR STATION

Discussing the importance of water conservation to insure adequate crop yields in the West Texas area of low rainfall, Mr. Dickson made the following statements (excerpts from his paper presented at the Ninth Southwest Soil and Water Conference):

"The Spur Station is in the 21-inch rain belt. The soil is a clay loam with a high water holding capacity and a low rate of infiltration. Available water for plants is the limiting factor in crop production. The work of the Spur Station has been for the most part the development of practices that would make larger quantities of water available for plants.

"During the 26-year period, 1912 to 1937, there were 1357 rain periods producing a total rainfall of 548.75 inches. Of this amount 52.62 per cent occurred in rain periods under one inch and 35.47 per cent in rain periods in which more than two inches fell.

"A very high percentage of the rainfall that occurs in rain periods of less than one inch is lost rapidly through evaporation.

". . .During the 12-year period, 1926 to 1937, the total run-off from a plat of buffalo grass with a two-per-cent grade has been 10.79 inches, and most of this occurred during the first year before the grass was well sodded. The largest amount of run-off has been from a fallowed plat of two-per-cent grade from which the loss was 69.75 inches during the 12-year period.

". . .Due to the fact that the smaller summer rains are readily lost throughevaporation only the larger rains are capable of producing available soil moisture for plants. Forty-five per cent of the heavier rainfall on the fallowed plat was lost as run-off and only 6.96 per cent of the same rains was lost from the grass plot. It is evident that grass is the most effective plant in the region for preventing run-off and controlling erosion and floods.

". . .Water conservation practices are much more workable on wheat land than on row crops, as wheat land is fallowed during the season of the year when practically all of the run-off occurs.

". . .Land with one-per-cent slope cropped to cotton has suffered, during the 12-year period, an average yearly run-off of 3.13 inches. This is slightly more than one-half the amount of water the cotton plant transpires in producing a half bale of cotton to the acre.

". . .Sixteen field areas each approximately 10 acres in size were established on the Station in 1927. During the following 11-year period, a field with level terraces has had a total run-off of 8.49 inches, or an average of .77 inches a year. A comparable field having terraces with a slope of 3 inches in 100 feet has lost 24.83 inches, an average of 2.26 inches a year. The total yield of cotton for the 11 years from the area with level terraces has been 1472 pounds of lint to the acre. The area on which the terraces were given a fall produced 1107 pounds of lint per acre. This is an increase of 365 pounds of lint in favor of the level terraces. With cotton figured at 10 cents a pound and cotton-

seed at $20.00 a ton the area with level terraces gave an increased return of $38.69 per acre during the 11-year period.

". . .Two other 10-acre areas on land with one-half-of-one-per-cent slope were included in an experiment started in 1927. On one of the areas level closed terraces were constructed. There has been no run-off from this area in 11 years. On the other area the rows were run with the slope; 22.36 inches of water have been lost from this area, an average of 2.12 inches a year. The yield of cotton for the 11-year period from the area on which the water was held has been 1887 pounds of lint per acre. The yield from the area on which the rows run with the slope has been 1160 pounds. This represents an increase of 727 pounds in favor of the closed end level terraces.

"Contoured rows, in three sets of experiments extending over a period of 8 to 11 years with a total of 26 replications, show the average annual water lost from areas contoured but not terraced to be only .46 of an inch and the cotton yield to be 130 pounds of lint to the acre as compared with 151 pounds of lint from comparable areas on which all of the rainfall was held. Contoured rows play a very important part in water conservation and it is possible that contoured rows under many conditions are sufficient."

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## McDOWELL DISCUSSES PROGRESS OF RESEARCH AT THE TEMPLE, TEXAS STATION

(Excerpts from a paper presented at the Ninth Southwest Soil and Water Conference, College Station, Texas By C. H. McDowell, Temple Station Superintendent)

"It is estimated that of a total of 9,500,000 acres of crop land in the Blackland Region of Texas that more than 7,700,000 acres need protection from erosion. A reconnaissance survey made in 1934 disclosed that approximately 5,600,000 acres of grassland lying in the Grand Prairie Region have been badly overgrazed and resultant soil and water losses have seriously decreased the livestock carrying capacity.

"For many years the general farming practice of the region has been that of running rows up and down the slope, which has been conducive to very severe sheet erosion. This damage is now recognized by the farmers by decreased yields on the steeper and upper parts of the slopes and the tendency of the soils on these slopes to "turn light". This "light turning" of the soil as described by the farmer is the result of the washing away of the black top soil and the exposure of the light colored, infertile subsoil.

"There are on the Temple Station 20 terraces which are equipped for measuring soil and water losses as a means of determining different design characteristics. Results of experiments to date indicated that: a) Level terraces with closed ends cannot be used satisfactorily in this area of Black Houston clay soil as these

terraces overtop, impound water and drown out crops in the terrace channel; b) level terraces with open ends also have a tendency to drown out crops and greatly impede timely farming operations such as planting and cultivating during wet years; c) soil losses decrease with the decrease of vertical spacings; d) a terrace of approximately 2000 feet is indicated as the maximum that should be used for this area; e) terrace outlets and outlet ditches must be protected--both vegetation and structures have been used successfully; f) terraces must be maintained at a minimum effective height of 18 inches to prevent overtopping during severe storms.

". . .An experiment was conducted at this Station from 1933 to 1936 on two fields of approximately 16½ acres each. One field was terraced and cultivated parallel to the terraces, while the other field was terraced and cultivated across the terraces, parallel to the fences and turn rows. The tillage operation time for this 4-year period was only two hours less for the straight row cultivation across terraces as compared with cultivation parallel to the terraces. There was no significant difference in yields on the two fields, but the soil loss was 7.7 tons more from the field with rows across the terraces than from the field cultivated with the terraces and the water loss was 2.54 per cent greater. On the field farmed across the terraces the terraces were overtopped a number of times during the four-year period whereas the terraces on the field farmed on the contour were never overtopped.

". . .and the data from this experiment indicate that the total amount of erosion was less severe on the field which was farmed parallel to the terraces.

"There are on the station five plots devoted to strip cropping. Of these, one plot is 1.4 acre in size and the length of the slope about 300 feet. The effectiveness of strip cropping in the conservation of soil and water is quite apparent from this experiment. The soil loss from a check plot with rows running up and down hill was eight times greater than that lost from the strip cropped plot. The practice of strip cropping was shown to be 8 to 28 times more effective in conserving soil than continuous cotton with rows down the slope.

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